

**TTF-PODANTS AND TTF-CALIXARENE ASSEMBLIES : ORIGINAL STRUCTURAL SOLUTION TOWARDS REDOX-RESPONSIVE LIGANDS**

JOEL LYSKAWA,<sup>a</sup> BANG-TUN ZHAO,<sup>a</sup> MARIA-JESUS BLESA,<sup>a</sup> FRANCK LE DERF,<sup>a</sup> ERIC LEVILLAIN,<sup>a</sup> PASCAL VIEL,<sup>b</sup> SERGE PALACIN,<sup>b</sup> MARC SALLE<sup>a,\*</sup>

*a* : Laboratoire de Chimie, Ingénierie Moléculaire et Matériaux d'Angers (CIMMA) ; UMR CNRS 6200 ; Université d'Angers ; 2, Bd Lavoisier ; F-49045-Angers Cedex, France

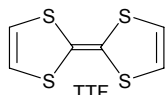
*b* : CEA-Saclay, DSM/DRECAM/SPCSI, Gif-sur-Yvette, France

marc.salle@univ-angers.fr

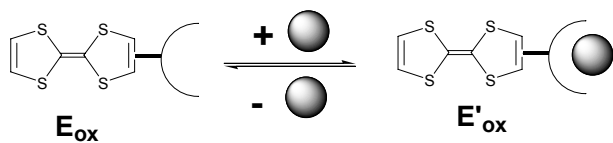
Host-guest chemistry plays a central role in supramolecular chemistry and the development of macrocyclic ligands for which complexation of a neutral or ionic guest induces a change in the optical or redox properties of the systems continues to provide a challenge.

Redox-responsive ligands can be built from the covalent association of a redox-active unit to a host framework, this assembly being able to generate an electrochemical signal when complexing an appropriate guest<sup>1</sup>.

We have been engaged for some years<sup>2</sup> in the preparation of redox-responsive ligands involving the redox-active tetrathiafulvalene (TTF) unit.

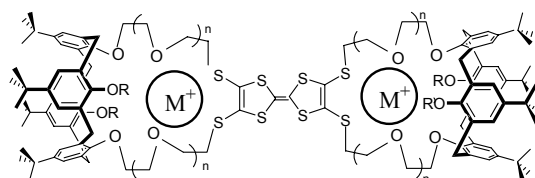
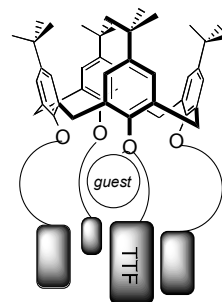


Indeed, recent developments in synthetic TTF chemistry have revolutionized the possibilities for incorporation of TTF into macrocyclic, molecular, and supramolecular structures.



An evident further step for applications lies in the immobilisation of these TTF-based redox-responsive (or switchable) ligands onto a conducting surface in order to reach modified electrodes.<sup>3</sup> Such modified surfaces, as we demonstrated very recently, may allow the electrochemical control of the binding, or on the contrary of the expulsion of a metal cation, giving rise to cation – sponges electrochemically addressed.<sup>4</sup>

In this communication, we will present our results concerning *i*) the synthesis of various combinations of macrocyclic host units to the TTF core, including recent developments in the field of TTF-podants and calixarene derivatives, *ii*) the evaluation of their recognition properties by different physicochemical methods, and finally, *iii*) the immobilization on conducting surfaces (electropolymerisation, self-assembly monolayers) of some of them.



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